

New and interesting grasshoppers from Southern Africa - 3 (Orthoptera: Acridoidea)

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INTRODUCTION

This paper is a continuation of similarly entitled papers which deal with the acridid fauna of Southern Africa. The species enumerated below have resulted from collections made in mountain localities associated with the central eastern plateau of the Drakensberg, South Africa. Apart from incidental collecting by Dr H. Scott, the only recent collection of grasshoppers made in these parts is that of Drs P. Brinck and G. Rudebeck of the 1950-51 Swedish Expedition to South Africa (abbreviated here to SESA). The present study does not pretend to be a complete list of the acridid fauna of this area; it merely adds some new and insufficiently known species to the existing records. The more common ones are thus omitted. For fuller details of this fauna the reader is referred to Dirsh (1956a).

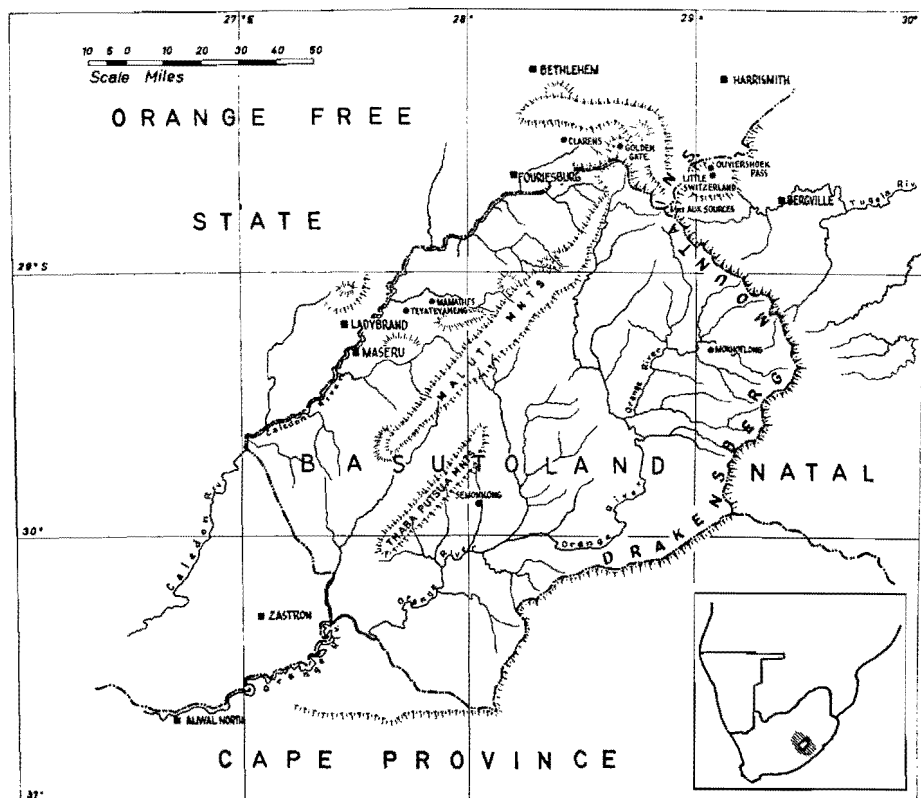
It should be noted that nearly all the newly described species are either apterous or brachypterous and, in general appearance, rather like nymphs and thus easily overlooked. For this reason it is important that future collectors devote more attention to such "doubtfully adult" forms in this area; further collecting is likely to reveal additional interesting forms.

GENERAL DESCRIPTION OF THE AREA

The Drakensberg massif, which occupies the entire enclave of Basutoland, forms in the east a spectacular and precipitous escarpment which is known as the Great Escarpment and overlooks the province of Natal; to the west it descends gradually through lesser ranges to the level plains of the Orange Free State. The greatest altitude is attained along the Great Escarpment with summits as high as 11,000 feet above sea level; towards the Orange Free State border in the west, the peaks rarely exceed 9,000 feet and most of the country lies at a general level of 5-6,000 feet.

This rugged mountain tract also forms the principal watershed of most of South Africa's largest rivers. The Great Escarpment and its foothills, known as the Little Berg, experience some of the highest rainfall in the country, up to 74 inches in a year. West of the escarpment, upon the plateau itself, the rainfall decreases, the annual average of Makhotslong being only 22 inches. The borderlands of the Orange Free State also receive substantial amounts of rain, means of 28 and 26 inches being recorded from Maseru and Bethlehem respectively. The winters are cold and dry with severe morning frosts. Light to moderate falls of snow occasionally occur at the higher elevations.

The vegetation consists mainly of montane and alpine grasslands. During the wet summer months the grass is lush and green but during the cold winter months it dries out to impart a characteristic yellow, straw-like colour to the landscape. Trees are scarce and limited mainly to *Protea* species on the lower slopes of the Little Berg and isolated patches of climax forest, dominated by *Podocarpus latifolius* R.Br., in the moister valleys of this same



The mountainous, central eastern plateau of South Africa, showing localities mentioned in the text.

zone. Up in the mountains, bushes are not very common. A stunted heath of *Erica*, *Helichrysum* and *Passerina* grows upon the shallow gravelly soils of the peaks and where overstocking or other malpractice has led to erosion, small karrooid communities, dominated by *Chrysocoma* and *Aster*, have established themselves. The Little Berg is covered with even stands of grass, *Themeda triandra* Forsk. predominating upon the xerocline slopes. In the warmer valleys this grass is replaced by a taller, coarser *Hyparrhenia* association. A similar mixed grassland, but with *Cymbopogon* and *Heteropogon* assuming importance grows along the Orange Free State border, sometimes penetrating along the river valleys deep into the mountains of Basutoland. These grasses are replaced on the basalt soils of the high mountains by a coarse-tufted alpine grass association composed of *Danthonia*, *Pentaschistis* and *Festuca* species.

Most of the grasshopper collecting was confined to the northern and western parts of the area at an average altitude of 5-6,000 feet. Localities typical of this montane zone (plate 3, fig. 1) are Clarens and Golden Gate in the Orange Free State, Oliviershoek Pass and Little Switzerland in Natal and finally, Maseru and Mamathes in Basutoland. The high alpine zone (plate 3, fig. 2), lying between 7-9,000 feet, was less intensively collected on account of its inaccessibility; some collecting was however carried out at Semonkong, Mokhotlong and along the Maluti Mountains in Basutoland.

In general, adult grasshoppers are present in the veld during the summer months only i.e. November to April. Into this period most species are able to intercalate two generations. During the winter months, apart from the occasional *Phymateus leprosus* (Fabr.), the veld is free of grasshoppers. Only in late August do the first nymphs appear. Hatching in these early species is probably associated with rise in temperature, since the first rains come only later in October. After the spring rains, the bulk of the species hatch and great numbers of nymphs as well as a few early adults are encountered in the veld. During the summer period, December to March, grasshoppers are extremely abundant. Rough estimates made with a wire quadrat in the grasslands around Bethlehem yielded 15-30 grasshoppers per square yard. In these samples *Pnorisa squalus* (Stål) and *Trilophidia angustipennis* (Kirby) were the two most common species. In May there is a sharp drop in numbers which is associated with the advent of the cold weather.

Johnston (1956) has been followed for taxonomy and nomenclature, but the classification of Dirsh (1956b) has been used for the major groups.

Family PAMPHAGIDAE

Genus *TRANSVAALIANA* Dirsh, 1958

Type species: *Xiphocera distantii* Saussure, 1892

This genus was recently established by Dirsh (1958) to accommodate the

PLATE 3



Fig. 1. The montane zone of the Little Berg with *Protea* dotted meadows and patches of climax forest in the valleys.

(Photo E. C. G. Bedford)



Fig. 2. The grassy alpine zone near the peaks of the Great Escarpment.

(Photo E. C. G. Bedford)

three species: *X. distanti*, *X. granulosa* Kirby, 1902 and *X. picta* Saussure, 1892. The types of all three species are in the British Museum (Natural History), London. Only the male of *distanti* has been described, it is micropterous. Another new species is now added. It is readily recognizable by the weakly impressed fenestrae of the pronotum, well developed elytra and wings, and finally by the irregular pattern on the external disc of the hind femur. In this latter respect it exhibits little affinity with the other species. However it is readily referred, on the basis of the deeply concave fastigium of vertex, tapering antenennae and bilobed prosternal tubercle to *Transvaaliana*. It is regarded as a somewhat distinct species only remotely related to the others.

Transvaaliana draconis spec. nov., figs. 1-8

♂-TYPE: Body of medium size, integument granulose, covered with scattered sharp teeth.

Fastigium of vertex widely triangular, deeply concave with high carinate margins. Frontal ridge scarcely protruding forwards, incurved at median ocellus in profile, narrow, with high lateral carinulae parallel, in upper half, fused at ocellus and diverging in lower half. Facial carinulae weak, granular. Ocelli well developed. Eyes globular, small. Integument of face with small scattered granules.

Pronotum with strongly excurved crest which anteriorly overlaps concavity of fastigium of vertex; fenestrae opaque when held against strong light source, only feebly impressed. Apex of prosternal tubercle divided into two triangular lobes. Elytron fully developed extending backwards to hind knee, apex narrow, subacute; wing well developed, slightly shorter than elytron. Upper margin of hind femur with sharp teeth, lower margin undulating with a few small teeth.

Tergites of abdomen with small median teeth. Supra-anal plate triangular, tectiform, with narrow basal, triangular sulcus and carinate margins. Subgenital plate strongly compressed, upturned and angular in profile. Epiphallus semicircular in shape with prominent ancorae and lateral clusters of small teeth; apex of penis rounded, laterally with numerous small teeth.

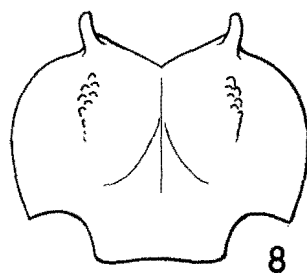
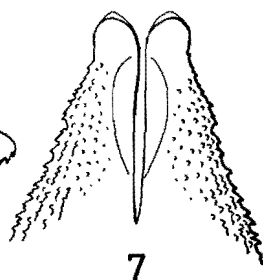
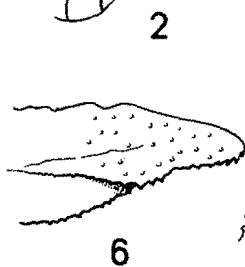
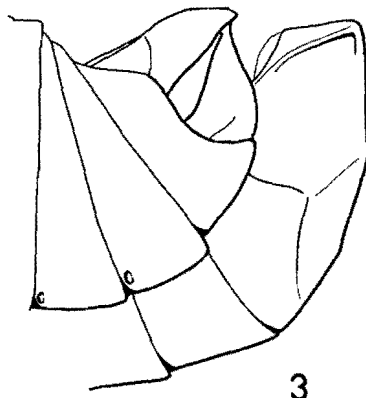
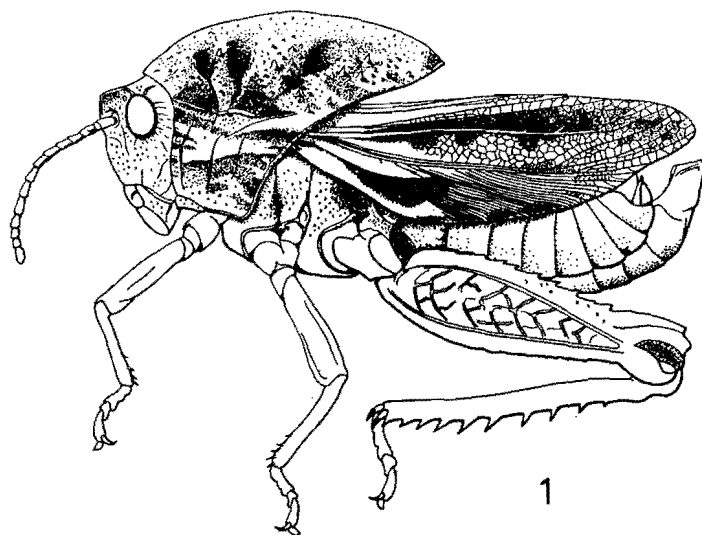
General body colour light brown, mottled irregularly with black patches. A narrow yellow fascia runs across pronotum and elytron. Legs grey-brown, hind femur internally with base marbled with black; apices of hind tibial spines black. Elytron with lustrous black patch anterior of stridulatory area.

Female unknown.

Measurements: Length of body: 33.6; pronotum: 17.2; elytron: 20.7; hind femur: 16.9 mm.

Material examined: NATAL, Little Switzerland (Bergville Distr.), I.II.1959, 1♂ (the type), leg. H. D. Brown.

The type is deposited in the Transvaal Museum, Pretoria.



The high, arcuate pronotal crest of the new species indicates relationship with *T. picta* (Saussure). The main distinguishing characters of the new species are, however, the more uniform carinulae of fastigium of vertex, which are notched immediately above the eye in *picta*; the shallow pronotal fenestrae, which are deep and transparent in *picta*; and finally the small teeth on the lower margin of the hind femur of the new species. In *picta* the latter structures are longer and more acute.

NOTES ON HABITAT: The above specimen was found amongst short grass growing on a gentle hill slope. It hopped rather clumsily along the ground not attempting to fly.

Family PYRGOMORPHIDAE

Parasphenoides meridionalis Kevan, 1956.

1956, *Publ. cult. Comp. Diam. Angola* 29: 120.

Material examined: ORANGE FREE STATE: Clarens (Bethlehem Distr.), 22.X.1958, 2 ♂♂; Bethlehem, 2.XI.1958, 3 ♂♂ and 2 ♀♀, leg. M. and H. D. Brown. BASUTOLAND: Maluti Mts. (Maseru Distr.), 30 miles E. Maseru, 28.II.1959, 3 ♂♂ and 1 ♀, leg. H. D. Brown; Mamathes (Berea Distr.), 14.X.1951, 1 ♂ and 1 ♀, leg. C. Jacot-Guillarmod.

NOTES ON HABITAT: This is a common grasshopper along the eastern border of the Orange Free State and the lowlands of Basutoland. Away from the mountains it is absent. It favours damp situations and is abundant on the herbage of roadside ditches where water is liable to accumulate after rain. It is strictly phytophilous in its habits and quite easy to capture. It has been found from October to April in the veld.

The body sculpture of this species is very variable.

Family LENTULIDAE

Lentula obtusifrons Stål, 1878.

1878, *K. svenska VetenskAkad. Handl.* 5 (4): 90

Material examined: BASUTOLAND: Semonkong (Mafeteng Distr.), 19-21. II.1959, 71 ♂♂ and 6 ♀♀; LeBihan Falls, near Semonkong, 19.II.1959, 1 ♂

EXPLANATIONS OF FIGURES

Transvaaliana draconis spec. nov., ♂-type.

Fig. 1. whole insect, lateral view; 2. antenna; 3. end of abdomen, lateral; 4. prosternal tubercle, anterior; 5. ditto, lateral; 6. apex of penis, lateral; 7. ditto, dorsal; 8. epiphallus.

and 1 ♀; Maluti Mts. (Maseru Distr.), 30 miles E. Maseru, 28.II.1959, 3 ♂ ♂, all leg. H. D. Brown.

NOTES ON HABITAT: This species is widely distributed along the east coast of South Africa, occurring along the mountains of the eastern Cape Province and extending as far north as Basutoland and Natal. It is phytophilous in habits frequenting the foliage of woody shrubs and herbs. It is sometimes found in great numbers upon the weed, *Elytropappus rhinocerotis* Less., a woody shrub, four feet or more in height, which is an invader of pasturelands in the Cape Province. According to Smit (1935: 462), heavy infestations of *L. obtusifrons* can damage the bushes and cause them to die off. Although biological control of the weed has been envisaged, the results of liberation of the insects have not been very promising (Smit, *l.c.*: 463). The causes and frequency of outbreaks of this grasshopper are still unknown. In the districts of Molteno and Sterkstroom of the Cape Province, the allied species, *L. callani* Dirsh, causes similar damage to another weed, *Euryops floribundus* N. E. Br., also invading pasturelands.

The present series from Basutoland indicates that *L. obtusifrons* is fairly catholic in its choice of foodplants. The specimens were mostly taken on the composite, *Berkheya* species, a herb which grows in loose stands on the warmer slopes of the river gorges. The individuals of the dense population found at Semonkong were very sluggish and spent most of the day basking on the upper sides of the leaves. They are able to dodge rapidly behind the leaves when disturbed and thus escape notice. Adult females at Semonkong were rare.

This species is also recorded by the SESA from Qachas Nek, Quthing, Maseru and Maluti Mts. in Basutoland.

Lentula minuta Dirsh, 1956, figs. 17-18

1956, *S. Afr. Animal Life* 3: 150

Material examined: NATAL: Oliviershoek Pass and Little Switzerland (Bergville Distr.), 31.I.1959, 63 ♂ ♂ and 29 ♀ ♀, leg. M. and H. D. Brown.

NOTES ON HABITAT: This species was encountered quite often on grassy mountain slopes where small hollows encouraged the growth of some shrubs. They were also, surprisingly enough, found in a vegetable garden feeding upon the leaves of spinach, carrot and beetroot. Slight damage to young spinach plants was noted. In the veld, during the day, they were seen in great numbers on grass, while in the evenings nearly all had moved into the bushes.

Flourishing cultures were maintained for some months in the laboratory, the insects feeding quite happily upon fresh lettuce leaves. Oviposition took place in the soil and details of the eggs obtained are: length of pod 40 mm; egg length 4.5-4.6 mm; enclosed in froth and with 36 eggs present.

In living specimens the entire body is yellow-green and suffused throughout by a bronze metallic reflection which disappears from preserved specimens. The species was previously only known from the Natal National Park, Mt.-aux-Sources.

Genus *EREMIDIUM* Karsch, 1896

Type species: *E. equuleus* Karsch, 1896

Seven species of this genus are at present known. The genus was originally erected for a unique female specimen of *E. equuleus* from Pondoland, the following species were then added: *maius* Ramme, 1929, *obtusus*, *attenuatus* and *erectus*, all described by Dirsh (1956a) and finally, *curvicerus* and *denticercus* also described by Dirsh (1956c), who has revised the genus and given a key to the species (*ibid.* 258). Another species is now added. The genus is remarkable for the great sexual dimorphism which it exhibits, the females are laterally compressed and very different from the males which are normally proportioned. The habits of a few species are now known, *E. obtusus* and *denticercus* both inhabit short grass and herbs growing on the forest floor or in forest clearings (Brown, 1959: 286). *E. attenuatus* has been collected on small woody shrublets in the semi-arid Great Karroo while *equuleus* lives on herbs growing in dense coastal forest. The habits of the other species are not known. The new species was collected from grass on top of the Drakensberg.

Eremidium basuto spec. nov., figs. 9-16

♂-TYPE: Body very small and slender, faintly rugulose, apex of abdomen upcurved.

Antenna with 18 filiform segments, shorter than head and pronotum together. Fastigium of vertex parabolic, apex truncate, surface convex, with strong lateral carinulae, in middle with short median carina which extends backwards to occiput. Frons in profile rounded, oblique, sloping backwards; frontal ridge, parallel in upper half and deeply sulcate with high lateral margins which merge apically in the form of an arch, in lower half feebly sulcate with low divergent carinulae. Facial carinulae well developed, oblique, sloping backwards. Eyes convex. Ocelli rudimentary, lateral ones on small tubercular projections.

Pronotum weakly tectiform with strong median carina, crossed by basal sulcus only, lateral carinae distinct, weakly constricted in middle. Prozona about four times as long as metazona, posterior margin of latter excised in middle. Lateral pronotal lobe with three distinct sulci evident, its middle with prominent convexity, posterior margin broadly rounded. Prosternal tubercle conical, triangular in front and convex behind, apex obtuse. Mesosternal interspace as wide as long, lateral lobes with straight posterior margins.

Metasternal interspace inversely triangular, open behind. Legs with hind femur slender; arolium longer than claw.

Last abdominal tergite with posterior margin strongly excised. Supra-anal plate triangular, apex rounded, crossed by deep sulcus, basally with large median and lateral tubercles, those in middle smaller and scattered, lateral ones near apex elongate. Cercus from above, curved in apical half, moderately long, apex acute. Subgenital plate conical, strongly curved upwards, apex tapered, acute. Epiphallus bridge-shaped, ancorae blunt, lophi large, hooked.

General body colour grey-brown; entire dorsal surface with median brown stripe, edged below by black patches which diminish progressively towards apex. Lateral lobe of pronotum with small ochreous spots near lower margin. Internal lobe of hind femur suffused with black; spines of hind tibia with black apices. Tubercles of supra-anal plate shining black.

♀ - PARATYPE: Larger than male, exhibiting the usual sexual dimorphism. Fastigium of vertex wider, apex more rounded. Frontal ridge wider, forming deep rounded concavity beneath vertex.

Pronotum strongly tectiform; supra-anal plate without tubercles; cercus straight, shorter than male; subgenital plate flat with small median triangular apex, weakly curved upwards at sides. Ovipositor valves stout, apices scarcely curved. General colour somewhat darker than male.

Measurements: Length of body: ♂ 9.1-9.6, ♀ 15.5; pronotum: ♂ 1.6-1.7, ♀ 2.2; hind femur: ♂ 4.8-4.9, ♀ 6.5 mm.

Material examined: BASUTOLAND: 5 miles S.W. Mokhotlong (Qachas Nek Distr.), alt. 9,000 feet, 25.II.1959, 4 ♂♂ and 1 ♀ (including the type), leg. H. D. Brown.

The type and one female paratype are deposited in the Transvaal Museum, Pretoria, other paratype deposited in the British Museum (Natural History), London and the National Collection of Insects, Pretoria.

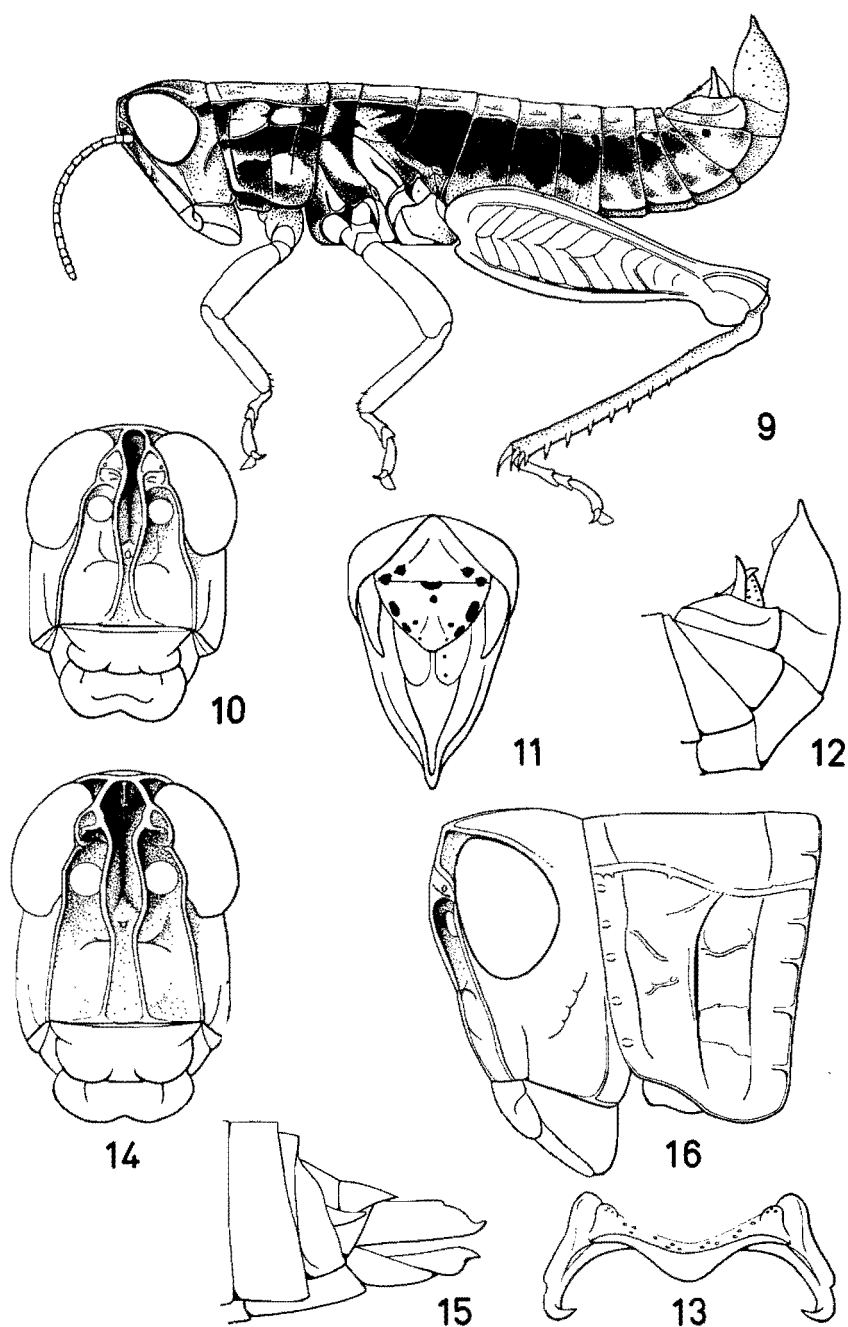
This distinctive species keys out (Dirsh, 1956c: 260) next to *E. curvircus* Dirsh and is distinguished by the convex fastigium of vertex which is concave in *curvircus*; by the rounded, deeply sulcate, apical angle of vertex which is wider and shallower and supports a prefastigial carina in *curvircus*; by the well developed lateral carinae of pronotum which are absent in Dirsh's species; and finally by the deep incision of the last abdominal tergite and more acute supra-anal plate with its totally different arrangement of tubercles.

EXPLANATIONS OF FIGURES

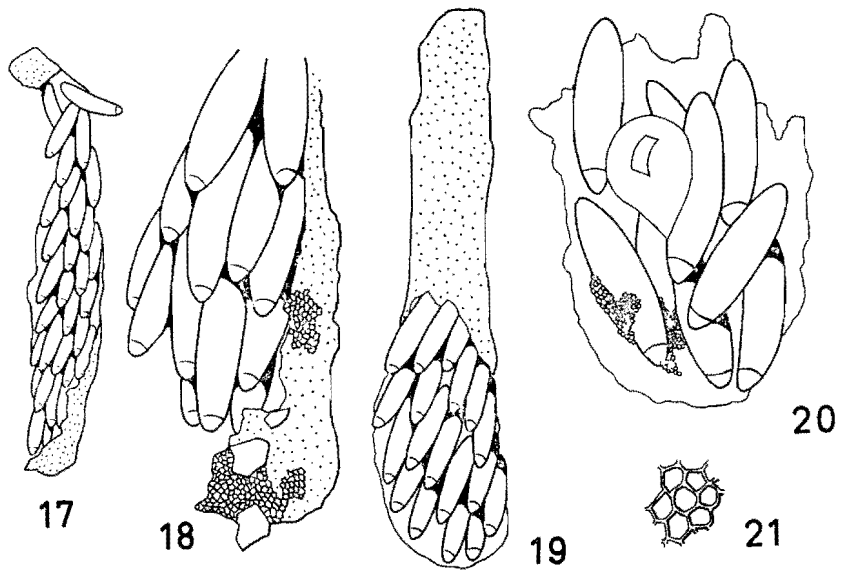
Eremidium basuto spec. nov., ♂ - type.

Fig. 9. whole insect, lateral view; 10. face; 11. end of abdomen, dorsal; 12. ditto, lateral; 13. epiphallus.

♀ - paratype: 14. face; 15. end of abdomen, lateral; 16. head and pronotum, lateral.



NOTES ON HABITAT: The specimens were collected on steep mountain slopes in dense *Danthonia-Festuca* alpine grassland. Much of the grass was withered and had collapsed to form a loose dry thatch on the ground amongst the tufts and provided thus excellent shelter for insects. The grasshoppers were usually found clinging to the emergent culms of the grass; when alarmed, however, they escaped by jumping into the thatch. Several mating pairs were seen but all these, except for one, escaped. The species was not common and despite several hours of diligent search only a few were found in this one locality. Below the 9,000 ft. level they are absent. This is the highest altitude in South Africa from which Lentulidae have been collected.



Lentula minuta Dirsh

Fig. 17. egg pod; 18. close-up of same, egg mass and froth.

Swaziacris fastigiata

Fig. 19. egg pod; 20. section of egg mass; 21. chorion sculpture.

Genus *SWAZIACRIS* Dirsh, 1953Type species: *S. burtti* Dirsh, 1953

The genus and species was known only by the type from Mbabane, Swaziland. There is now available a small series of specimens, undoubtedly belonging to this genus, from Natal. These were compared with the type of *S. burtti* and found to differ in a number of significant points. The description of this new species follows.

Swaziacris fastigiata spec. nov., figs. 19-23

Mainly distinguished from the type species by its less sculptured body, straight lateral carinulae of fastigium of vertex and the feebly protruding frons.

♂ - TYPE: Body small, integument feebly rugulose and tuberculate.

Head sparsely covered with small tubercles and rugosities. Antenna filiform, feebly compressed towards base and consisting of 19 segments. Fastigium of vertex scarcely projecting in front of eyes, surface shallowly depressed, laterally with strong, straight lateral carinulae which extend backwards to vertex. Frontal ridge in upper half laminate, feebly projecting, sulcate at median ocellus, in lower half, again sulcate and with low diverging lateral carinulae.

Pronotum short, median carina strongly developed, cut by basal sulcus only, prozona about three times length of metazona, posterior margin of latter faintly scalloped; lateral carinae callose, constricted, only developed in prozona. Prosternal tubercle stiletto-shaped, apex subacute, base rounded, anterior surface flat. Mesosternal interspace narrow, longer than wide. Femora of fore and middle legs inflated; knee of hind femur extending well beyond end of abdomen, external surface of hind femur convex with irregular fish-bone pattern. Hind tibia shorter than hind femur, compressed and widened apically; first tarsal segment strongly compressed dorsoventrally.

Supra-anal plate triangular with scattered tubercular ornamentation, basally sulcate, in middle divided by low ridge. Cercus conical; subgenital plate laterally compressed, upcurved, apex rounded in profile. Epiphallus with erect ancorae; lophi scimitar-like, outer margins sinuous; bridge stout.

General body colour dark brown with scattered black areas along the sides. Antenna rufous; abdomen, ventrally near base, yellow. Fore and intermediate legs mottled brown, hind femur on inside with irregular black patches, ventrally yellow. Hind tibia red, spines white, apices black; basal segments of tarsus red, apical segments brown.

♀ - PARATYPE: Much larger than the male, body with less sculpture. Fastigium of vertex wider, sloping down more in front; frontal ridge scarcely projecting forwards; mesosternal interspace about as wide as long. Supra-anal plate without ornamentation.

General body colour pale brown, with practically no black pigmentation; ventral parts of body brown; lower surface of hind femur dirty yellow-brown.

Measurements: Length of body: ♂ 12.9-13.7, ♀ 25.8-26.8; pronotum: ♂ 2.7-2.8, ♀ 4.4-4.6; hind femur: ♂ 8.1-8.3, ♀ 11.9 mm.

Material examined: NATAL: Little Switzerland (Bergville Distr.), 31.I.1959, 4 ♂♂ and 2 ♀♀ (including the type), leg. M. and H. D. Brown.

The type and two paratypes are in the Transvaal Museum, Pretoria, a pair of paratypes in the British Museum (Nat. Hist.), London and one male paratype in the National Collection of Insects, Pretoria.

The foregoing species is remarkably similar to *S. burtti*, but its principal differences are:

<i>fastigiata</i>	<i>burtti</i> Dirsh
body only feebly sculptured	: strongly tuberculate and rugulose
fastigium of vertex with straight lateral margins.	: margins sinuous.
frontal ridge only feebly projecting in front.	: strongly projecting.
hind margin of pronotum feebly scalloped.	: very distinctly scalloped.
mesosternal interspace narrow, especially in ♂.	: much wider in both sexes.

NOTES ON HABITAT: The specimens were taken mainly on the leaves of low herbs growing along the periphery of a patch of dense forest. A pair was also taken on the leaf litter of the forest-floor. An intensive search revealed only six specimens of this rare species. One female was kept for several weeks in the laboratory; she was rather sluggish and seldom jumped about in the cage. Two egg-pods were obtained, one with 25 and the other with 32 eggs; details are: length of pod 38 mm; egg length 4.0-4.1 mm; chorion with reticulated sculpture. It was not possible to rear nymphs from these eggs.

EXPLANATIONS OF FIGURES

Swaziacris fastigiata spec. nov., ♂ - type.

Fig. 22. fastigium of vertex, dorsal; 23. ♀ - paratype, ditto, dorsal.

Swaziacris burtti Dirsh, ♂ - type.

Fig. 24. fastigium of vertex, dorsal (after Dirsh, 1953).

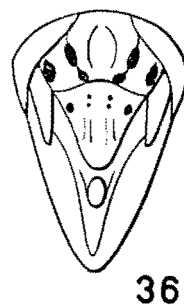
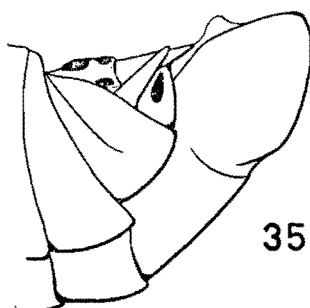
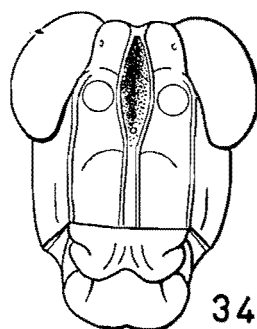
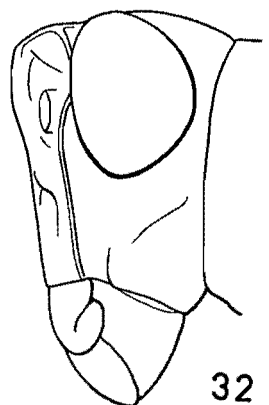
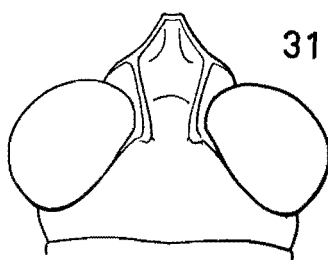
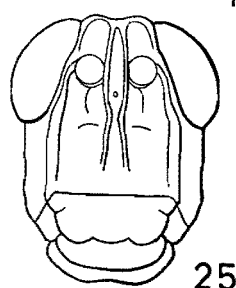
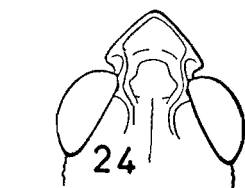
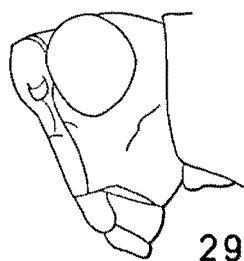
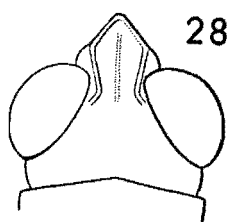
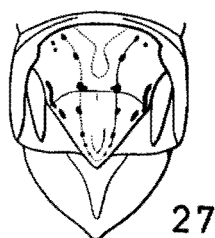
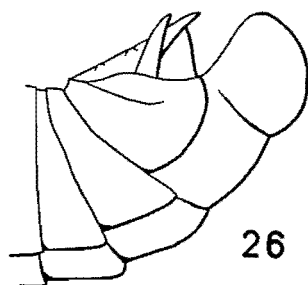
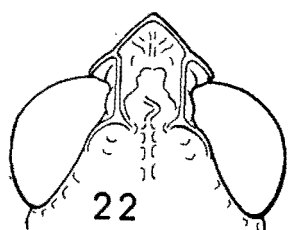
Basutacris scotti Dirsh, ♂ - type.

Fig. 25. face; 26. end of abdomen, lateral; 27. ditto, dorsal; 28. head, dorsal; 29. ditto, lateral (all after Dirsh, 1953); 30. apex of penis, profile.

Basutacris inflatifrons spec. nov., ♂ - type.

Fig. 31. head, dorsal; 32. ditto, lateral; 33. apex of penis, profile; 34. face; 35. end of abdomen, lateral; 36. ditto, dorsal.

(Figs. 24-29. del. W. Fürst)



Genus *BASUTACRIS* Dirsh, 1953Type species: *B. scotti* Dirsh, 1953

Two species, *B. scotti* from Maluti Mts., Basutoland and *natalensis* Dirsh, 1956 from Natal National Park, Drakensberg, were so far known. Two more species are now described as new.

Key to the species of *Basutacris* Dirsh

1. Supra-anal plate in male with tubercular ornamentation 2
Supra-anal plate without tubercles *minuta*
2. Fastigium broad, as long as wide; frontal ridge not projecting in profile . *natalensis*
Fastigium narrower, about one and half times as long as broad, projecting . . . 3
3. Frontal ridge tapering evenly between antennae; subgenital plate rounded . .
in profile *scotti*
Ridge distinctly widened between antennae; plate with subacute apex . . .
in profile *inflatifrons*

Basutacris scotti Dirsh, 1953, figs. 25-30

1953, *Ann. Mag. nat. Hist.* (12) 6: 376.

Material examined: BASUTOLAND: LeBihan Falls, near Semonkong (Mafeteng Distr.), 19.II.1959, 1 ♂ and 14 ♀ ♀; Malealea, 60 miles S. Maseru, 27.II.1959, 2 ♂ ♂ and 5 ♀ ♀; 30 miles E. Maseru, Maluti Mts. (Maseru Distr.), 28.II.1959, 10 ♂ ♂ and 7 ♀ ♀; Mamathes (Berea Distr.), 7.I.1959, 3 ♂ ♂ and 3 ♀ ♀; all leg. H. D. Brown; Mamathes, 10.IV.1950, 1 ♂ and 2 ♀ ♀; same locality, 11.II.1951, 2 ♂ ♂ and 3 ♀ ♀, leg. C. Jacot-Guillarmod. ORANGE FREE STATE: Modderpoort National Monument (Ladybrand Distr.), 28.VIII.1958, 1 ♂ and 1 ♀; Clarens (Bethlehem Distr.), 12.I.1959, 4 ♂ ♂ and 2 ♀ ♀, leg. M. and H. D. Brown.

NOTES ON HABITAT: This insect is widely distributed over the western parts of Basutoland and the eastern borders of the Orange Free State, wherever herbs and low bushes grow. Such vegetation is characteristic of cool, damp situations found on the mesocline slopes and kloofs of the rivers. The species is entirely phytophilous in habits being found on several different herbs, such as *Cirsium* and *Cineraria* species. They crawl sluggishly about on the foliage, seldom jumping, and are easily caught with a glass tube.

Their season commences with the first warm weather in August and continues until April in autumn. There are probably at least two generations in a season since nymphs have also been encountered in January. Besides the type locality, Maluti Mts., they are also recorded by the SESA from Quthing and Mokhotlong. In the foothills of the Great Escarpment in Natal this species is replaced by *B. natalensis* Dirsh.

Measurements of specimens from various localities are given in table I.

TABLE I: Measurements of *Basutacris scotti* Dirsh from different localities.

	Series measured	Lengths: (in mm)			locality
		body	pronotum	h. femur	
♂ ♂	10	12.2-14.2	1.9-2.2	7.6-8.2	Maluti Mts.
♀ ♀	4	19.1-22.6	2.7-2.9	6.2-6.9	
♂ ♂	6	11.5-13.1	1.9-2.2	6.5-6.8	Mamathes
♀ ♀	6	19.1-22.7	2.7-3.1	7.8-9.1	
♂ ♂	2	11.7-12.1	1.9-2.0	—	Malealea 60 miles S. Maseru
♀ ♀	2	18.9-19.8	2.8	8.6-8.7	
♂ ♂	1	14.8	2.4	6.9	Ladybrand
♀ ♀	1	23.0	3.2	9.5	

Basutacris natalensis Dirsh, 1956

1956, *S. Afr. Animal Life*. 3: 162.

Material examined: NATAL: Oliviershoek Pass and Little Switzerland (Bergville Distr.), 31.I-1.II.1959, 39 ♂♂, 21 ♀♀ and 10 nymphs, leg. M. and H. D. Brown.

NOTES ON HABITAT: This is a locally common grasshopper confined to shrubs and herbs growing in the hollows of the lower slopes of the mountains. Large numbers, including mating pairs were found on the leaves of a tall unidentified shrub in these hollows. A number of colour forms were collected, these varied from pea green to light brown with intermediates of olive and grey. A large culture was maintained for several months in the laboratory. Pairing and oviposition took place and pods were laid in a tray of soil provided on the floor of the cage. Egg-pods were sent to the Anti-Locust Research Centre, London, but hatching was apparently not successful.

Basutacris inflatifrons spec. nov., figs. 31-36

This species is close to *B. scotti* Dirsh but differs in its smaller size, less projecting and inflated frontal ridge, totally different ornamentation of supranal plate and in the more acute subgenital plate of the male. The epiphalli of the two species are, however, very similar and only the apices of the penis exhibit slight difference.

♂-TYPE: Body small, integument finely rugulose and wrinkled.

Fastigium of vertex with blunt apex, lateral margins incurved, dorsal surface deeply concave. Frontal ridge hardly protruding forwards in upper

half, deeply sulcate, strongly expanded with high carinate margins, in lower half parallel, constricted below ocellus.

Pronotum small, median and lateral carinae indistinct, disc crossed by basal transverse sulcus only; prozona four times length of metazona, posterior margin of latter weakly incurved. Entire surface of pronotum finely wrinkled. Prosternal tubercle conical, apex obtuse. Mesosternal interspace longer than wide.

Supra-anal plate triangular, apex rounded, in middle crossed by strong sulcus; basally with four partly fused large tubercles arranged around elliptical depression, laterally with large isolated tubercles; apically with small central tubercles and pair of larger, lateral ones. Cercus elongate, cylindrical, apex acute. Epiphallus with curved bridge, ancorae conical, lophi long, pointed, apices weakly hooked. Apical part of penis valves, moderately rounded in profile. Subgenital plate laterally compressed, upcurved, conical, apex subacute.

General body colour light olive-brown with restricted black areas behind eyes and along sides of thorax and first abdominal segment. Lateral lobe of pronotum with prominent short yellow stripe along lower margin. Hind femur externally green, dorsal and ventral carinae of disc with scattered small black dots. Entire upper surface of hind tibia black, ventral surface brown, spines tipped with black. Tubercles of supra-anal plate shining black.

♀ - PARATYPE: Similar to male but somewhat larger. Fastigium of vertex wider; sulcus of frontal ridge shallower than male. Supra-anal plate more acute, without any tubercles. Subgenital plate flat, feebly rounded at sides with short median triangular projection.

General body colour bright pea-green, lateral lobe of pronotum with conspicuous black patch, otherwise similar to male.

Measurements: Length of body: ♂ 8.4-10.8, ♀ 15.0-20.3; pronotum: ♂ 1.3-1.7, ♀ 2.0-2.5; hind femur: ♂ 5.0-5.7, ♀ 6.5-7.7 mm.

VARIATION: Study of paratypes indicates considerable colour variation and slighter structural variation in both sexes. Body colour varies from green to brown but is more constant in the male. The lateral black areas tend to fade away in some specimens. Structural variation is confined mainly to the head and concerns the apex of the fastigium of vertex and its degree of projection forwards. In some of the paratypes, the apical angle is wide and feebly projecting, while in others, it is narrower and more strongly projecting. The latter specimens, even the extreme forms, cannot be confused with *B. scotti*. The variability exhibited by these paratypes is regarded as individual.

Material examined: BASUTOLAND: Semonkong, Malutsunyane River (Mafeteng Distr.), 19-21.II.1959, 93 ♂♂ and 91 ♀♀ (including the type), leg. H. D. Brown.

The type and many paratypes are in the Transvaal Museum, Pretoria, while other paratypes have been distributed amongst the following institutions: National Collection of Insects, Pretoria; Natal Museum, Pietermaritzburg;

South African Museum, Cape Town; British Museum (Nat. Hist.), London; Academy of Natural Sciences, Philadelphia; United States National Museum, Washington, D.C.

This remarkable species may be separated from its nearest ally, *B. scotti*, as follows:

<i>inflatifrons</i>	<i>scotti</i> Dirsh
size small	: larger.
apex of fastigium of vertex blunt, sides feebly incurved.	: apex more pointed, sides straight.
frontal ridge weakly projecting, distinctly inflated between antennae.	: strongly projecting, subparallel between antennae, not inflated.
supra-anal plate with elliptical arrangement of tubercles.	: arranged along median ridge.
♂ subgenital plate with subacute apex.	: apex round.
tibia brown, dorsal surface black.	: tibia red.

NOTES ON HABITAT: This insect occurs on low, grey-coloured *Cineraria* bushes which grow in dry, rocky situations and are sometimes abundant on the loose, stone walls flanking the main bridle paths. Large numbers of these grasshoppers were found sitting and feeding on the upper foliage of these bushes along the Malutsunyane River valley. The insects sit for most of the day on the upper sides of the leaves and when disturbed dart quickly around to the lower surface and thus escape attention. They are otherwise fairly sluggish in their movements and rarely jump about in the bushes. Despite the large number of pairs present, only a small percentage were actually mating. Solitary females were rare, all had males clinging to their backs. Crude dissection of several females showed the ovarioles to be well developed and apparently ready for ovulation. However, no oviposition was observed, but undoubtedly as in the other species of this genus, the pods are laid in the soil beneath the bushes. The new species is somewhat restricted in its distribution, since examination of much wetter side-kloofs, only a few miles downstream at the LeBihan waterfalls only yielded specimens of *B. scotti*. Similar investigations carried out on the same bush at Mamathes in the lowlands, showed again that only the latter species was present. So far, *B. inflatifrons*, has been found only at the one locality listed above.

Basutacris minuta spec. nov., figs 37-42

This species is separated from the other species of the genus by its small size, by the flat dorsal surface of fastigium of vertex, by the unadorned male supra-anal plate and by the highly characteristic acute subgenital plate of the male.

♂-TYPE: Body very small, laterally compressed, surface finely rugulose and lustrous. Legs and ventral surface of body covered with pale pubescence.

Antennae with 19 filiform, rather thick, segments, compressed in the basal third and longer than head and pronotum together. Fastigium of vertex triangular, as long as broad, surface flat, with low carinate margins developed anteriorly, behind with fine median carinulae. Frontal ridge in upper half projecting strongly forwards, sulcate, lateral carinulae constricted below median ocellus, diverging above clypeus. Facial carinulae sinuous, well developed. Head feebly convex above; eyes oval, convex, longer than broad; ocelli well developed.

Pronotum short, subcylindrical without median and lateral carinae; dorsum crossed by basal sulcus only, surface rugulose and weakly punctured. Lateral lobe of pronotum with three sulci evident, lower margin strongly sinuous, posterior margin almost straight. Prosternal tubercle transverse, low, apex conical, obtuse. Mesosternal interspace transverse, wider than long, lateral margins rounded; mesosternal lobes with oblique posterior margins. Metasternal interspace consisting of two large, semi-circular punctures, open behind. Fore and middle legs with robust femora; hind femur long, slender, outer surface convex with well developed fish-bone pattern. Hind tibia slender, almost as long as hind femur.

Supra-anal plate triangular, without tubercles, apex subacute, crossed by low transverse carinulae; cercus conical. Subgenital plate conical, laterally compressed, weakly upcurved, apex acute. Epiphallus with low bridge, ancorae elongate, lophi straight, weakly hooked at apices.

General body colour olive brown with irregular patches of red on occiput and pronotum, laterally with broad green stripe extending from behind eye across pronotum and along abdomen. Face, and femora of all legs bright green; hind tibia with dorsal surface black, ventral surface light brown, spines capped with black.

♀ -PARATYPE: The mature female is not known, only a final instar nymph is available, it is larger than the male and its colour exhibits more red than the male.

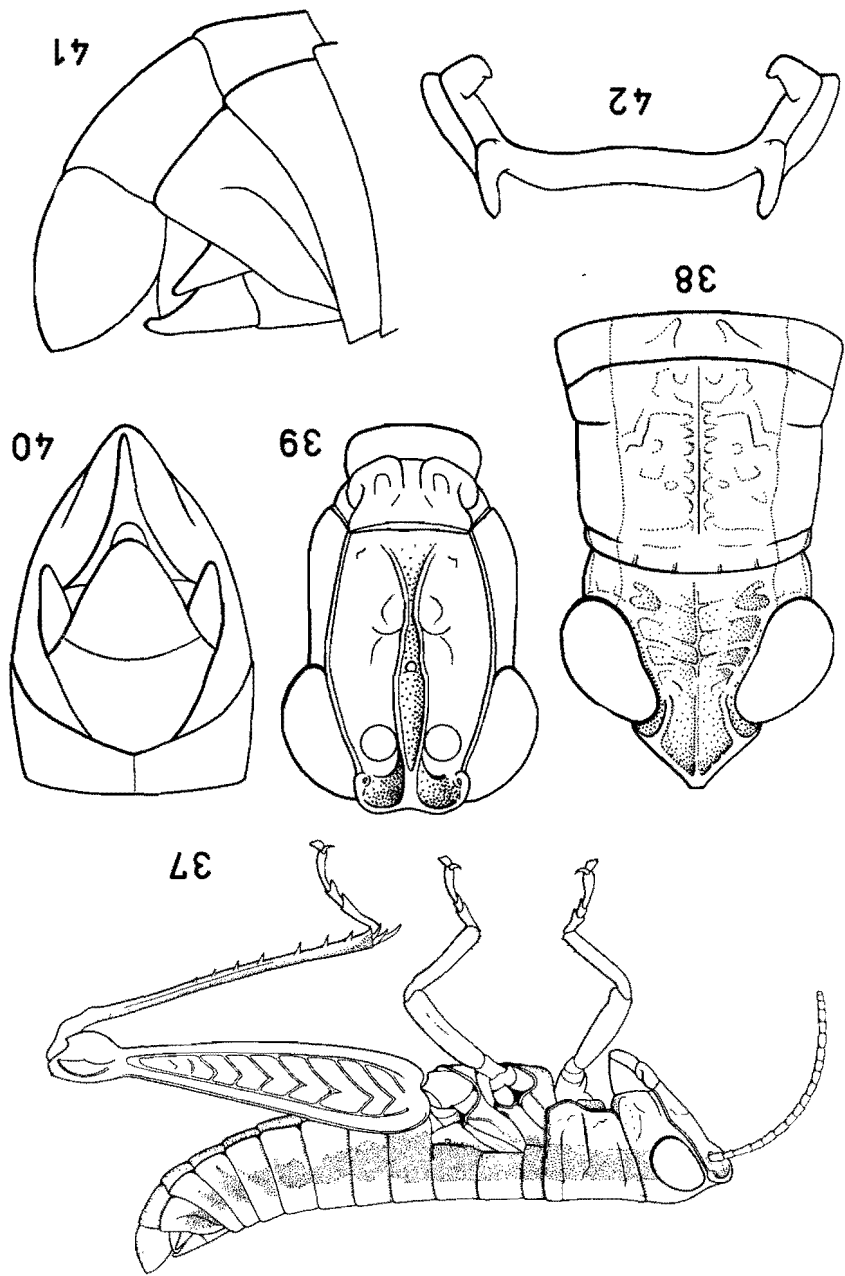
Measurements: Length of body, ♂ 8.2-10.1; pronotum, ♂ 1.6-1.7; hind femur, ♂ 5.2-6.2 mm.

VARIATION: There is some variation in the colour of the body, in some of the paratypes it is entirely green without red patches, while others resemble the type. No structural differences are evident.

EXPLANATIONS OF FIGURES

Basutracis minuta spec. nov., ♂ - type.

Fig. 37. whole insect, lateral view; 38. head and pronotum, dorsal; 39. face; 40. end of abdomen, dorsal; 41. ditto, lateral; 42. epiphallus.



Material examined: ORANGE FREE STATE: 10 miles E. Clarens (Bethlehem Distr.), 12.I.1959, 4 ♂♂; Clarens, 23.I.1959, 9 ♂♂, 1 ♀ nymph (including the type); Golden Gate, 12 miles E. Clarens, same date, 9 ♂♂, all leg. H. D. Brown. NATAL: Little Switzerland (Bergville Distr.), 31.I.1959, 1 ♂, leg. M. Brown.

The type and several paratypes are in the Transvaal Museum, Pretoria; other paratypes have been deposited in the National Collection of Insects, Pretoria; South African Museum, Cape Town; British Museum (Nat. Hist.), London; Academy of Natural Sciences, Philadelphia; United States National Museum, Washington, D. C.

The new species is readily distinguishable from *B. scotti*, *natalensis* and *inflatifrons* by its small size, flat surface of fastigium and plain supra-anal plate. In the three species listed above, the fastigium is always concave and the supra-anal plate has an arrangement of large, conspicuous tubercles. The male subgenital plate of both *scotti* and *natalensis* has moreover, a rounded profile, while that of *inflatifrons*, though being more acute than these species, does not approach the strongly acute condition of *minuta*.

NOTES ON HABITAT: The adults of this insect are extremely small and easily overlooked or mistaken for first instar nymphs. They were all collected on the culms of knee-high grasses on the exposed slopes and valleys of mountains, lying between 6-7,000 feet. They are strong jumpers and appear somewhat more alert and active than the other species of this genus. Their capture is not very easy as their small size enables them to disappear in the rank grass. This species has not been found elsewhere in the high mountains nor in the plains below 6,000 feet.

Family ACRIDIDAE

Subfamily EURYPHYMINAE

Platacanthoides bituberculatus Uvarov, 1922

1922, *Trans. ent. Soc. Lond.* 1922: 154.

Material examined: BASUTOLAND: Mokhotlong (Qachas Nek Distr.), 25.II.1959, 3 ♂♂ and 2 ♀♀; 60 miles S. Maseru (Mafeteng Distr.), 27.II.1959, 1 ♂, leg. H. D. Brown.

NOTES ON HABITAT: This is a powerfully built insect which makes short clumsy flights when disturbed. It is a geophilous species spending most of the day on bare ground and avoiding well-vegetated tracts. All specimens were collected on bare areas where erosion had removed the natural grass cover or in abandoned maize cultivations. Most of the specimens from Mokhotlong were either immature or still teneral. This could have been a second generation but it may well be that the low temperatures experienced

at these high altitudes retard the emergence of the first generation. The species has previously been recorded from near Quthing and Mokhotlong (Basutoland) by the SESA. It is also known from the Orange Free State.

Rhachitopis ceraseus Uvarov, 1922

1922, *Trans. ent. Soc. Lond.* 1922: 145.

Material examined: BASUTOLAND: 10 miles S. Teyateyaneng (Berea Distr.), 18.XII.1958, 4 ♂♂ and 3 ♀♀, leg. M. Brown; 15 miles N. Maseru, 7.I.1959, 5 ♂♂ and 1 ♀; Mokhotlong (Qachas Nek Distr.), 25.II.1959, 2 ♂♂ and 2 ♀♀, leg. H. D. Brown.

NOTES ON HABITAT: Like the preceding species this insect is a clumsy flier which spends most of its time on the bare ground. It is always associated with well drained, eroded areas where the dominant vegetation is a karrooid, bush stipple. It is not found in the grassy areas. When handled it regurgitates copious amounts of black fluid. The males have the curious habit of retracting the curved tibia hard up against the underside of the femur and in this way pinch the fingers of the collector.

This species is very common in the arid steppes of the Karroo Region and ranges across the entire Karroo from Middelburg in the east to Karasburg, S.W. Africa, in the west. North of this area in S.W. Africa it is replaced by the ecologically similar species, *R. curvipes* (Stål). The distribution of *R. ceraseus* Uvarov in Basutoland, where it is confined without exception, to the invasive Karroo vegetation, suggests that the species is living near the wet limits of its distribution. Indeed, further north in the eastern parts of South Africa it is absent.

Subfamily CATANTOPINAE

Genus *DIRSHIA* gen. nov.

Body small, robust, integument shining and finely punctate, ventral surface covered with long pale hairs.

Antenna filiform, shorter than head and pronotum together. Fastigium of vertex sloping gently forwards, merging roundly with frons, apex broadly rounded, obtuse. Interocular space three times as wide as first antennal segment; frons in profile excurved sloping backwards; frontal ridge low, flat, gradually widened at median ocellus, obliterated below.

Pronotum stout, subcylindrical, dorsum crossed by three deep sulci. Median carina very feebly developed; lateral carinae absent. Prozona slightly longer than metazona, posterior margin of latter broadly rounded. Lateral lobe of pronotum with lower margin excurved in middle. Prosternal tubercle tongue-shaped, compressed, apex acute. Mesosternal interspace about twice as long as wide, inner margins rounded. Metasternal interspace inversely triangular, deeply pitted. Elytron abbreviated, overlapping dorsally, anterior

margin excurved, apex attenuate reaching to third or fourth abdominal segment. Wings small. Femora of fore and middle legs slightly swollen. Hind femur slender, hind tibia with external apical spine present. Arolium large, longer than claw.

Tympanal organ large, well developed. Male supra-anal plate rectangular, margins raised, angular, median apical part excurved, basal third of plate crossed by low carina. Female supra-anal plate triangular, apex obtuse. Male cercus, elongate, cylindrical; in female, small, triangular. Subgenital plate, in male, laterally compressed, conical, apex slightly obtuse; in female with three triangular projections, lateral ones located on sides, median one ventral and with apex acute. Epiphallus large, bridge very wide, divided in middle; ancorae small; lophi very large, scimitar-like. Basal and apical parts of penis connected by a weak flexure.

Type species: *Dirshia abbreviata* spec. nov.

The flexured condition of the valves of the penis make it possible to refer this remarkable genus to the subfamily Catantopinae of the Acrididae. Its exact position within this subfamily is, however, somewhat obscure. The divided condition of the bridge of the epiphallus, the presence of the external apical spine of the hind tibia and the general structure of the pronotum are all suggestive of the group Oxyae (cf. Dirsh, 1956b: 253, pl. 38). The species of the latter group differ, however, in having the lower lobe of the hind knee with a sharp and prominent spine and the distal part of the hind tibia somewhat expanded. Such structures are not present in the new genus.

The genus is named in honour of Dr V. M. Dirsh, Anti-Locust Research Centre, London, as a tribute to his important work on the Acridoidea of South Africa.

Dirshia abbreviata spec. nov., figs 43-53

♂-TYPE: Antenna with 23 segments; facial carinulae low, obtuse. Eyes oval, slightly convex; median ocellus slightly smaller than lateral ones.

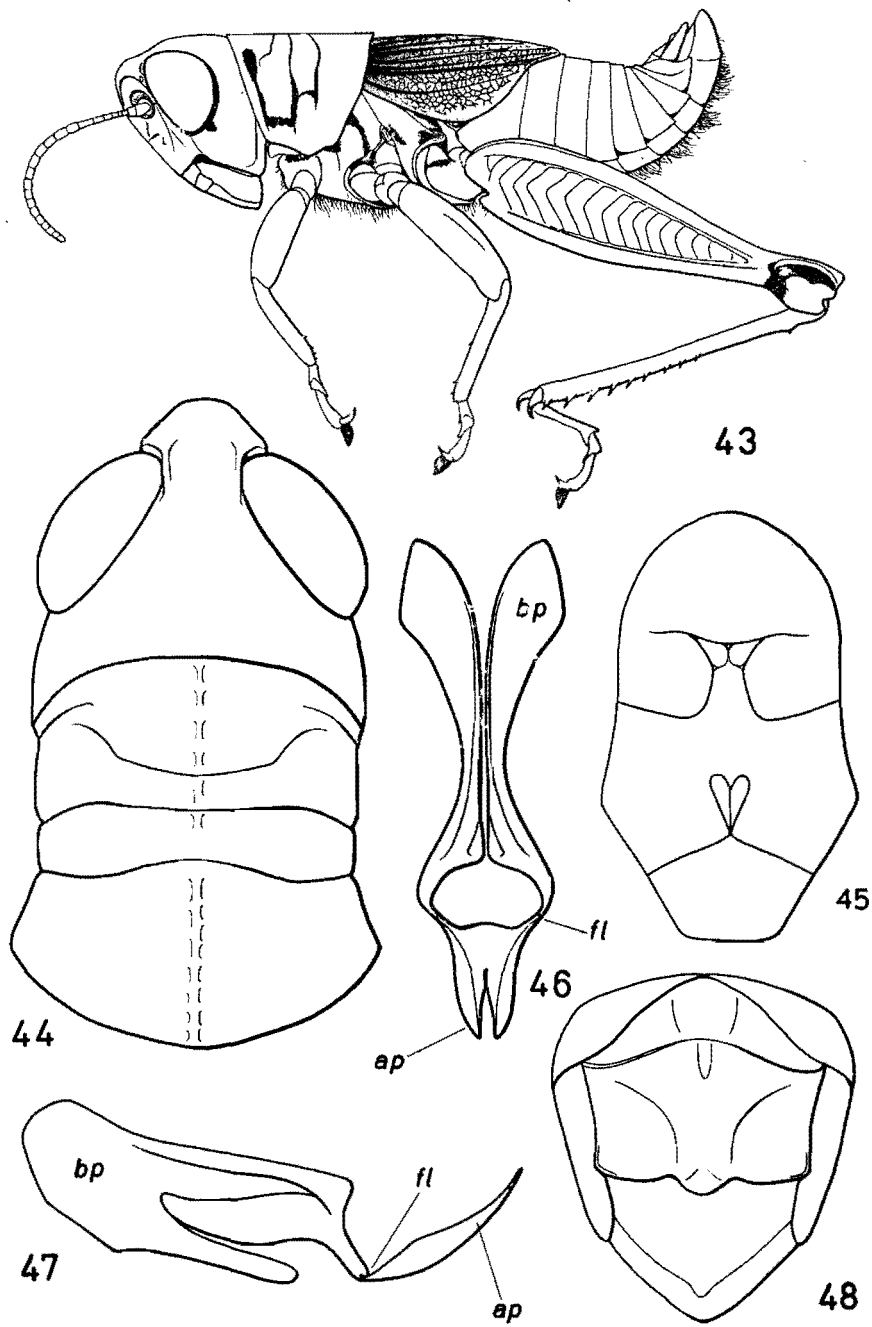
Pronotum with integument finely wrinkled and lustrous, surface covered with short erect hairs. Elytron reaching to third abdominal segment. Hind tarsus with basal segment strongly widened and compressed. Cercus rod-like, elongate, tapering towards apex which is obtuse. Sternites of abdomen covered with patches of long, pale hairs.

EXPLANATIONS OF FIGURES

Dirshia abbreviata gen. et spec. nov., ♂-type.

Fig. 43. whole insect, lateral view; 44. head and pronotum, dorsal; 45. meso- and metasternum; 46. penis, dorsal; 47. ditto, lateral; 48. end of abdomen, dorsal.

(ap = apical portion of penis valves, bp = basal portion and fl = connecting flexure)



General body colour olive-green. Head with genae, antennal sockets and basal parts of mandibles marked with black. Lateral lobe of pronotum with sulci edged with black, sides of meso- and metathorax also with black patches. Hind knee externally, black. Hind tibia olive-brown, tibial spines yellow, apices black; arolia black.

♀ - PARATYPE: Very similar to male but larger. Elytron with sharper attenuate apex. Valves of ovipositor moderately robust, dorsal pair with upper margin serrated. Subgenital plate trilobate with acute triangular projection in middle. Sternites of abdomen also hairy.

General body colour very similar to male; anterior margin of pronotal lobe with large black patch; hind femur pale brown.

Measurements: These are given in table II:

TABLE II: Measurements of *Dirshia abbreviata* from two localities.

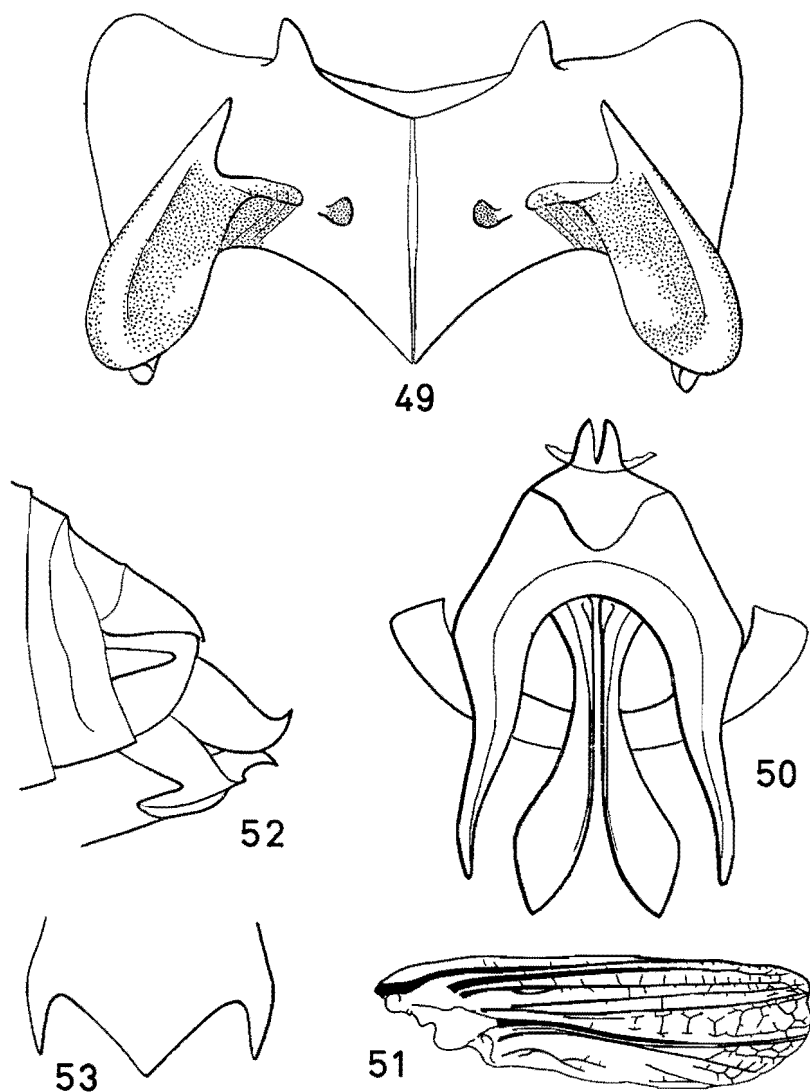
	Series measured	Lengths: (in mm)				locality
		body	pronotum	elytron	h. femur	
♂ ♂	22	16.1-19.1	3.5-4.0	4.4-5.6	9.8-10.8	Little Switzerland
♀ ♀	5	20.3-22.8	4.6-4.9	5.2-6.6	12.5-13.8	
♂ ♂	7	18.7-19.9	3.8-4.1	4.9-5.8	10.5-10.8	Yellow Woods
♀ ♀	3	23.2-26.4	5.3-6.0	7.7-8.0	13.9-15.2	

VARIATION: The series from Yellow Woods, near Balgowan are slightly larger and darker than the type but exhibit no structural differences.

Material examined: NATAL: Little Switzerland (Bergville Distr.), 31.I.1959, 22 ♂ ♂ and 5 ♀ ♀ (including the type), leg. M. and H. D. Brown; Yellow Woods near Balgowan (Lions River Distr.), 18-28.II.1960, 7 ♂ ♂ and 3 ♀ ♀, leg. G. van Son.

The type and many paratypes of this remarkable insect are deposited in the Transvaal Museum, Pretoria; other paratypes have been sent to the following institutions: British Museum (Nat. Hist.), London; National Collection of Insects, Pretoria; Academy of Natural Sciences, Philadelphia; United States National Museum, Washington, D.C.; Natal Museum, Pietermaritzburg.

NOTES ON HABITAT: *D. abbreviata* is a phytophilous insect which frequents the vegetation of wet swampy areas on the lower slopes of the Little Berg. At Little Switzerland it was found in knee-high grasses and sedges growing in shallow standing water. The behaviour of the insect can best be described as skulking, since it creeps into the basal tufts of the vegetation when disturbed. It is a powerful jumper, soaring up in a high arc before plunging headfirst into the vegetation. After diving into a tuft, some individuals were observed



Dirshia abbreviata gen. et spec. nov., ♂-type.

Fig. 49. epiphallus; 50. phallic complex, dorsal; 51. wing.

♀-paratype: Fig. 52. end of abdomen, lateral; 53. subgenital plate, ventral.

with the head down and the legs outstretched behind them. They remained motionless in this position for some while, only running off into the grass when disturbed. Specimens were caught by marking the point of landing and then quickly beating the grass down sideways with the palm of the hand and entrapping them in the straws. Their cryptic colour and skulking behaviour coupled with their powerful saltatorial habits appear to constitute a highly efficient defense mechanism. The females are more conspicuous than the males and are easier to catch. Several of the females were teneral and nymphs were not uncommon.

Subfamily ACRIDINAE

Genus *WEENENIA* Miller, 1932

Type species: *Weenenia thomasseti* Miller, 1932

The type species in the British Museum (Nat. Hist.), London was studied (figs 60-62). The distinctive species described here as *W. lineata* is not in agreement with Miller's specimen, and may be out of place in this genus. It differs from *W. thomasseti* in such important characters as the pronotum and supra-anal plate (cf. figs 55, 60 and figs 59, 62). In view of our present, poor knowledge of this group, however, it seems inadvisable to establish a new genus for this species.

As the position of the new species is suspect, attention is drawn to the following generic characters: Pronotum more elongate, lateral carinae straight and parallel to each other; last abdominal tergite of male deeply emarginate; supra-anal plate of male elongate, tongue-shaped, dorsal surface concave. Cercus rod-like.

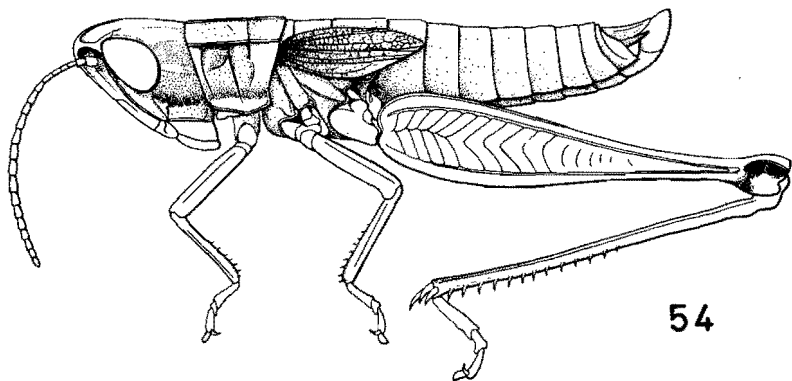
Weenenia lineata spec. nov., figs 54-59

♂ - TYPE: Body slender, of medium size. Antenna longer than head and pronotum together with 21 segments, basal ones compressed and widened, apical ones filiform. Head conical, oblique. Fastigium of vertex triangular, apex obtuse, surface convex, lateral carinulae sinuous, median carina straight, extending backwards almost to pronotum. Frons in profile straight, sloping backwards; frontal ridge narrow, except for apex, sulcate, lateral carinulae high, gradually diverging below.

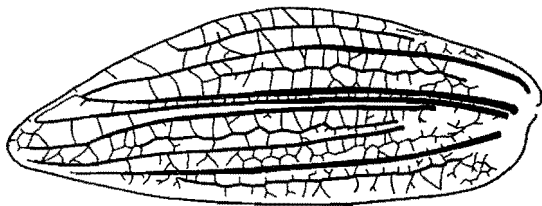
EXPLANATIONS OF FIGURES

Weenenia lineata spec. nov., ♂ - type.

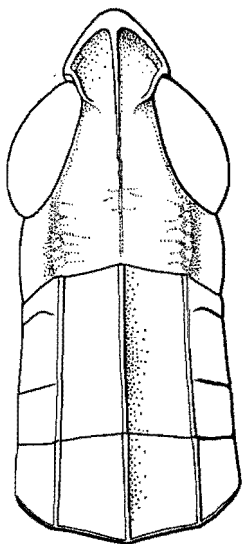
Fig. 54. whole insect, lateral view; 55. head and pronotum, dorsal; 56. elytron; 57. meso- and metasternum; 58. epiphallus; 59. end of abdomen, dorsal.



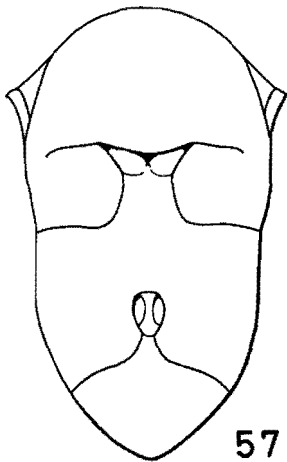
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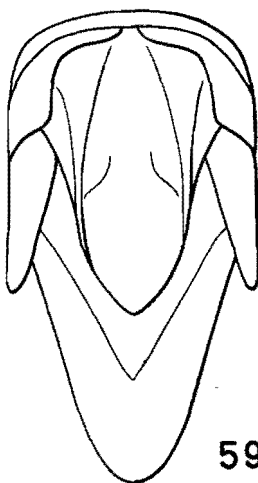
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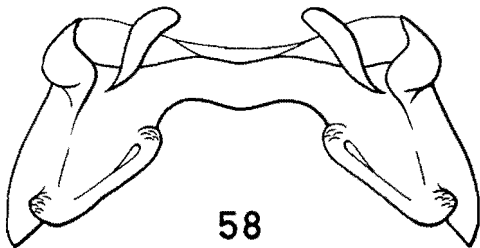
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59



58

Pronotum above tectiform, somewhat angular in section, sides perpendicular. Median carina strongly developed, cut by basal sulcus only; lateral carinae high, straight, parallel with median carina. Prozona slightly less than twice length of metazona, posterior margin of latter sinuous, excurved. Mesosternal interspace constricted in apical third, twice as long as wide; mesosternal lobes truncate. Metasternal interspace narrow, elliptical. Elytron lateral, anterior margin excurved, apex narrowly pointed, extending to base of third abdominal segment. Wing well developed, slightly shorter than elytron. Legs slender, fore and middle femur with dorsal longitudinal carinae; hind femur elongate, slender with regular fish-bone pattern. Hind tibia shorter than femur. Arolium as long as claw.

Tympanal organ well developed, large. Supra-anal plate tongue-shaped, apex subacute, concave in middle, laterally with raised carinate margins. Cercus conical, elongate, apex acute. Subgenital plate conical, apex obtuse. Epiphallus with large lateral projections, ancorae short and acute, lophi hooked.

General body colour pale olive-brown; ventral surface of abdomen and hind femur, pale yellow. Hind knee black; hind tibia with entire upper surface black, spines white, apices black.

♀ - PARATYPE: Very similar to male, only larger. Supra-anal plate tongue-shaped, divided in middle by fine transverse ridge, surface flat. Cercus short, conical; valves of ovipositor moderately stout, apices curved. Subgenital plate flat with median triangular apex and curved sides.

General body colour pale brown.

Measurements: Length of body: ♂ 13.1-14.8, ♀ 19.5-23.8; pronotum: ♂ 2.3-2.6, ♀ 3.2-3.7; elytron: ♂ 2.8-3.7, ♀ 4.2-5.5; hind femur: ♂ 8.6-9.5, ♀ 11.2-13.6 mm.

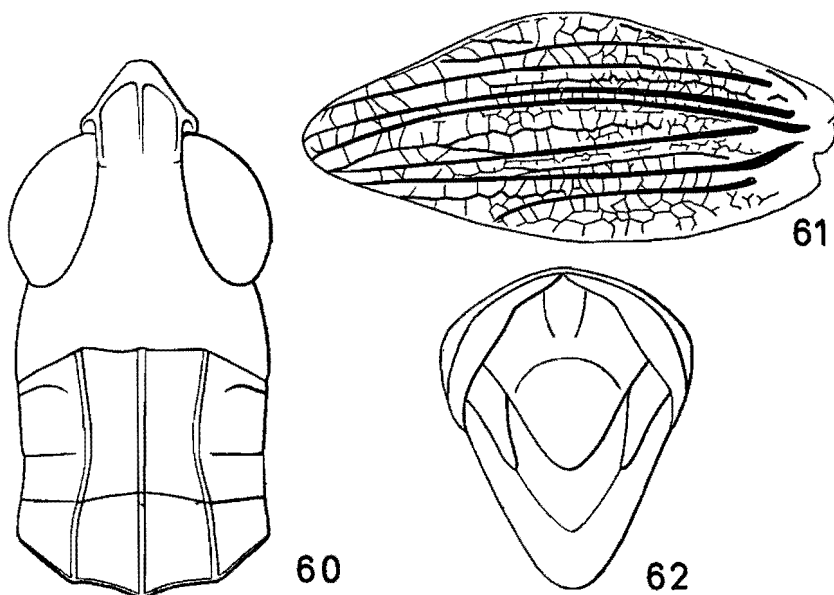
Material examined: ORANGE FREE STATE: Sunnyside Farm, 10 miles E. Clarens (Bethlehem Distr.), 12.I.1959, 3 ♂♂ and 1 ♀ (including the type); 1 mile W. Clarens, same date, 13 ♂♂ and 4 ♀♀; Golden Gate, 15 miles E. Clarens, 23.I.1959, 12 ♂♂ and 2 ♀♀, all leg. M. and H. D. Brown. NATAL: Little Switzerland (Bergville Distr.), 31.I.1959, 1 ♀, leg. H. D. Brown.

The type and some paratypes have been deposited in the Transvaal Museum, Pretoria, other paratypes have been sent to: British Museum (Nat. Hist.), London; Academy of Natural Sciences, Philadelphia; United States National Museum, Washington, D.C.; Natal Museum, Pietermaritzburg; South African Museum, Cape Town; National Collection of Insects, Pretoria.

The two species, now referred to *Weenenia*, can be separated as follows:

<i>lineata</i>	<i>thomasseti</i> Miller
lateral carinae of pronotum straight.	: arcuate, constricted in middle.
cercus elongate, cylindrical.	: small and conical.
supra-anal plate tongue-shaped and sulcate in ♂.	: triangular and convex with transverse sulcus.

NOTES ON HABITAT: *W. lineata* is a graminicolus species which lives in the high mountains around Clarens. It appears to favour grassy slopes with *Rhus* thickets growing close by. They are powerful jumpers, undertaking short gliding flights and seek refuge, when pursued, in the nearby bush thickets where they are difficult to find. The males are particularly elusive and always keep well out of reach. Both sexes spend most of the day clinging to the grass culms and were seen feeding upon the leaves of the tufts. Despite extensive sampling, they have not been found southwards along the Maluti Mountains or within the interior of Basutoland. They are also absent from the plains of the Orange Free State. The species appears thus to be limited in its distribution to areas of intermediate altitude, between 6-7,000 feet, along the northern spurs of the Drakensberg.



Weenenia thomasseti Miller, ♂-type.

Fig. 60. head and pronotum, dorsal; 61. elytron; 62. end of abdomen, dorsal.

Subfamily TRUXALINAE

Pseudoarcyptera palpalis (Uvarov, 1929)

1929, *Ann. S. Afr. Mus.* 29: 48

Material examined: BASUTOLAND: 5 miles W. Mokhotlong (Qachas Nek Distr.), 25.II.1959, 4 ♂♂, leg. H. D. Brown.

NOTES ON HABITAT: The specimens were found high up on the grassy slopes just beneath the summit of an 8,000 foot mountain. They are rather noisy stridulators and are fairly active during the day. The species is easily recognized by the specialized venation of the elytra and the swollen apical segments of the maxillary and labial palps.

Leva species

Material examined: BASUTOLAND: Mokhotlong (Qachas Nek Distr.), 25.II. 1959, 4 ♀ ♀, leg. H. D. Brown.

NOTES ON HABITAT: A very rare species which was found on eroded, rocky hill-slopes behind the village, flying short distances in *Aristida* grassland. Despite an intensive search, no males were encountered. The insects have the fastigial foveolae placed vertically upon the head and are at once distinguishable from *Paragymnobothrus* Karny by the narrow sulcate frontal ridge and row of fine stridulatory pegs on the inner surface of the hind femur. The above insects are remarkable for the strong reduction of the elytra which overlap dorsally and extend only halfway along the abdomen. The description of this curious insect is deferred until males can be collected.

The specimens are deposited in the Transvaal Museum, Pretoria.

SUMMARY

Apart from the 1950-51 Swedish Expedition there have been relatively few collections of grasshoppers from the central eastern Drakenberg plateau of South Africa. The present study describes seven new species together with a remarkable new genus from this region. Additional data on the biology, distribution and ecology are given for nine other known species. A short account of the topography, climate and vegetation of the Drakensberg attempts to place the ecology of the grasshoppers occurring there in better perspective.

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